

ALABAMA
ARKANSAS
FLORIDA
GEORGIA
KENTUCKY
LOUISIANA
MARYLAND
MISSISSIPPI
MISSOURI
NORTH CAROLINA
PUERTO RICO
SOUTH CAROLINA
TENNESSEE
VIRGINIA
WEST VIRGINIA

SOUTHEASTERN COOPERATIVE WILDLIFE DISEASE STUDY



COLLEGE OF VETERINARY MEDICINE
THE UNIVERSITY OF GEORGIA
ATHENS, GEORGIA 30602-7393

January 14, 1998

TELEPHONE
(706) 542-1741

FAX
(706) 542-5865

RECEIVED

FEB 11 1998

Yazoo National Wildlife Refuge

Mr. Tim Wilkins
Yazoo National Wildlife Refuge
Route 1, Box 286
Hollandale, Mississippi 38748

Dear Tim:

Enclosed is our report on the deer herd health check that we conducted on Yazoo National Wildlife Refuge, Washington County, Mississippi, on September 4, 1997. The data are summarized in three tables (parasitologic, serologic, and pathologic) and are accompanied by interpretative comments. Our findings are briefly summarized below.

This population appears to be near nutritional carrying capacity based on the moderately high APC value, the levels of other parasites and pathologic conditions, and the general physical parameters of the animals. Currently, the herd does not appear to have any significant density related health problems, and we did not encounter any overtly diseased deer. The herd has moderate immunity to epizootic hemorrhagic disease viruses, but prediction of future activity by the hemorrhagic viruses is not possible. Our data indicate that the herd can be maintained near its present density without undue risk of declines in herd health provided that habitat quality remains stable. Any significant increase in density can be expected to be accompanied by problems with a syndrome of parasitism and malnutrition. You will note that the physical parameters for this population are generally better than those for the Hillside National Wildlife Refuge animals, and my explanation for this is the higher soil fertility and more extensive availability of agricultural crops at Yazoo National Wildlife Refuge.

I trust this information will be of value in the management of this deer population. If you have any questions about the report, please do not hesitate to contact me.

Best regards,

Sincerely,

William R. Davidson, Ph.D.
Assistant Professor

WRD

Enclosures

CC: Mr. S. Ray Aycock
Mr. C. Robert Cooke, Jr.
Dr. E. Frank Bowers
Dr. Milton Friend
Mr. Robert Griffin
Mr. Bill Thomason

Table 1. Arthropod, helminth, and protozoan parasites of five white-tailed deer (Odocoileus virginianus) from Washington County, Mississippi, on September 4, 1997.

Animal Number	1	2	3	4	5	Animal Nu
Age (years)	2.5	3.5	1.5	3.5	2.5	Lice
Sex	F	F	F	F	F	Louse
Weight (pounds)	128	130	95	155	140	Flies
Physical Condition	Good	Good	Good	Good	Good	Chiggers
Kidney Fat Index	31.2	36.9	82.6	30.7	27.9	Ear Mites
Packed Cell Volume	47	29	41	47	33	Nasal Bot
Hemoglobin	16.5	12.0	15.5	16.5	13.5	

Location in Host	HELMINTHS	1	2	3	4
Subcutaneous					
Brain					
Circulatory					
Lungs	Dictyocaulus viviparus	9	23	1	3
	Protostrongylid larvae	-	-	+	-
	Setaria yehi	-	-	2	2
Abdominal Cavity					
Liver					
Esophagus					
Rumen					
Abomasum	Mazamastromylus odocoilei	-	57	-	-
	Mazamastromylus pursglovei	970	1,190	90	247
	Ostertagia dikmansii	-	-	-	-
	Ostertagia mossi	570	113	90	93
	Monodontus louisianensis	+	-	-	-
Small Intestine					

Table 2. Results of serologic tests for selected diseases in five white-tailed deer from Yazoo National Wildlife Refuge, Washington County, Mississippi, on September 4, 1997.

Disease	Deer Number				
	1	2	3	4	5
Leptospirosis					
(serotype <u>bratislava</u>)	Neg	Neg	Neg	Neg	Neg
(serotype <u>pomona</u>)	Neg	Neg	Neg	Neg	Pos
(serotype <u>hardjo</u>)	Neg	Neg	Neg	Neg	Neg
(serotype <u>grippotyphosa</u>)	Neg	Neg	Neg	Neg	Neg
(serotype <u>icterohemorrhagiae</u>)	Neg	Neg	Neg	Neg	Neg
(serotype <u>canicola</u>)	Neg	Neg	Neg	Neg	Neg
Brucellosis	Neg	Neg	Neg	Neg	Neg
Infectious bovine rhinotracheitis (IBR)	Neg	Neg	Neg	Neg	Neg
Bovine virus diarrhea (BVD)	Neg	Neg	Neg	Neg	Neg
Parainfluenza ₃ (PI ₃)	Neg	Neg	Neg	Neg	Neg
Epizootic hemorrhagic disease (EHD)	Neg	Pos	Neg	Pos	Pos
Bluetongue (BT)	Neg	Pos	Pos	Neg	Pos

Table 3. Lesions and pathologic conditions in five white-tailed deer collected from Yazoo National Wildlife Refuge, Washington County, Mississippi, on September 4, 1997.

Lesion/Condition	Deer Number				
	1	2	3	4	5
Focal verminous pneumonia	1	-	1	-	-
Bronchitis/peribronchitis	-	-	1	1	-
Fibrinous pleuritis	1	-	1	-	-

*Key: - = lesion or condition not present; 1 = minor tissue damage or mild pathologic change; 2 = moderate tissue damage or moderate pathologic change; 3 = extensive tissue damage or marked pathologic change.

INTERPRETIVE COMMENTS: White-tailed deer collected from Yazoo National Wildlife Refuge, Washington County, Mississippi, on September 4, 1997.

Large lungworms (Dictyocaulus viviparus) present at low to moderate numbers in all five deer. Protostrongylid larvae, probably from muscleworms (Parelaphostrongylus andersoni), present in two animals. Large lungworms and protostrongylid larvae associated with mild lung damage (pleuritis, peribronchitis, pneumonia) in three deer. Abomasal parasites (Mazamastrongylus odocoilei, M. pursglovei, Ostertagia dikmansi, and O. mossi) at a moderate level (APC = 1,060) indicating that the herd has a high probability of being near nutritional carrying capacity. Hookworms (Monodontus louisianensis) and abdominal worms (Setaria yehi) present but not considered important to herd health at the levels encountered. Blood protozoans (Trypanosoma cervi) present in one of the animals but this parasite is not considered pathogenic. Arthropod parasites at levels below those typical of many deer herds in the Southeast.

Physical condition ratings, kidney fat indices, hematologic values, and body weights were within ranges associated with relatively healthy deer populations. No significant lesions were noted other than the mild changes attributable to parasitism. Serologic tests for antibodies to selected infectious diseases disclosed positive reactions to epizootic hemorrhagic disease (EHD) and bluetongue (BT) viruses which are the cause of hemorrhagic disease; however, the concordance of antibodies in the same three animals suggests that reactions to one of the agents (probably BT) were cross-reactions. These results indicate that one or more of the hemorrhagic disease viruses have been active during the past 3 years (deer were ≥ 2.5 yr) and that currently there is a moderate level of herd immunity. One deer had antibodies to Leptospira interrogans serovar pomona. Antibodies to this bacterium are detected occasionally in deer, however, leptospirosis is a very rare disease among wild deer. Serologic tests for the remaining infectious organisms were uniformly negative indicating minimal activity by these diseases within the population.

An overview is as follows: (1) based on APC data the herd probably is near nutritional carrying capacity; (2) the levels of important pathogenic parasites are not at levels sufficient to be of immediate concern, although a potential for lungworm disease is clearly present; (3) there has been activity by one or both of the hemorrhagic disease viruses in the past and currently there is moderate herd immunity to these viruses; (4) other selected viral and bacterial diseases have not had high levels of activity on the area; and (5) the overall health status of the herd presently is such that disease-related mortality probably is minimal. Continuation of current herd density should not risk a decline in herd health.